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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,010	12/29/2005	Kazumasa Ogura	053328	4078

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WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER	
VANOY, TIMOTHY C	
ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
08/06/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/563,010	OGURA ET AL.	
	Examiner	Art Unit	
	TIMOTHY C. VANOY	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-15 and 17-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *13 and 25* is/are allowed.

6)☒ Claim(s) *11,12,14,15,17-24 and 26-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in this application reasonably reflect this level of skill.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 11, 12, 14, 15, 17-24 and 26-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Pat. 5,853,680 to Iijima et al. in view of JP 06-170,215 A to Horizoe et al. and further in view of U. S. Pat. 1,968,864 to Wineman.

Fig. 1 and the description of Fig. 1 set forth col. 3 ln. 49 to col. 4 ln. 17 in U. S. Pat. 5,853,680 illustrates and describes a process for removing carbon dioxide out of natural gas, comprising:

feeding the carbon dioxide-contaminated natural gas (1) into an absorption tower (2) where the natural gas is scrubbed with an amine absorption solution to produce a refined natural gas (3) and a carbon dioxide-loaded absorption solution (4);

feeding the carbon dioxide-loaded absorption solution (4) into a regeneration tower (7) produce a carbon dioxide-lean absorption solution and a carbon dioxide-rich gas;

passing the carbon dioxide-rich gas through a condenser (10) and separating drum (11) *which is submitted to inherently condense out and remove any water entrained in the carbon dioxide-rich gas;* and

passing the resulting “dried” carbon dioxide-containing gas through a compressor (12) to produce a high-pressure carbon dioxide gas that may be stored in the earth.

The difference between the Applicants' claims and U. S. Pat. 5,853,680 is that the Applicants' claims set forth that the dried compressed impurity gas (i. e. the high pressure carbon dioxide gas of U. S. Pat. 5,853,680) is fed into an *underground aquifier* (whereas col. 4 ln. 17 in U. S. Pat. 5,853,680 sets forth that the high pressure carbon dioxide gas is stored in the *earth*).

The English abstract of JP-215 sets forth that carbon dioxide gas is stored in what appears to be illustrated as an *underground* aquifier.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made *to have modified* the process described in U. S. Pat. 5,853,680 *by preferentially storing* the storing the carbon dioxide gas in the underground aquifier illustrated and discussed in the abstract of JP-215, as set forth in the Applicants' claims, *because* the English abstract of JP-215 renders well known and conventional in the art to store carbon dioxide in such an underground aquifier, and it is obvious to do what is conventional in the art. Further motivation can be found in the fact that such storage of carbon dioxide in underground aquifiers is expected to produce the advantage of minimizing the emissions of unwanted, "earth - heating", "green - house" carbon dioxide gas into the atmosphere.

The difference between the Applicants' claims and U. S. Pat. 5,853,680 is that the Applicants' claims further describe the compressor as being driven by a driving means.

U. S. Pat. 1,968,864 on pg. 1 lns. 76-78 sets forth that an electric motor is connected to a compressor for the purpose of driving the compressor.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further described the compressor used in the process and apparatus of U. S. Pat. 5,853,680 as being equipped with "driving means", as set forth in the Applicants' claims, because the disclosure set forth on pg. 1 lines 76-78 in U. S. Pat. 1,968,864 renders conventional and obvious to provide such "driving means" for driving the compressor.

Allowable Subject Matter

Applicants' claims 13 and 25 have not been rejected under either 35USC102 or 35USC103 because the limitations of these claims are not taught or suggested in any of the references applied in the 103 rejection.

Response to Arguments

The Applicants' arguments submitted with their Amendment filed on June 13, 2008 have been considered, but are moot in view of the new grounds of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY C. VANOY whose telephone number is (571)272-8158. The examiner can normally be reached on Mon-Fri 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Timothy C Vanoy
Primary Examiner
Art Unit 1793

tcv

/Timothy C Vanoy/
Primary Examiner, Art Unit 1793